

The type of industrial research-development covered by these surveys ranges from pure research designed to obtain new knowledge in the physical and life sciences to conceiving and developing new products, new processes, and major changes in products and processes and bringing them to the stage of production. Such activities as market and sales research and process and quality control are excluded. Companies surveyed were asked to report the cost of research-development done within the company in Canada and payments for research done outside the company in Canada; estimates of payments for research-development conducted outside the company and outside of Canada were also requested.

Since data for 1958 and 1960 are only estimates based on companies' intentions, more accurate comparisons may be made between the years 1957 and 1959. Total expenditures on research-development—including activities within companies, payments to outside companies in Canada and payments to organizations in other countries—decreased from \$148,200,000 in 1957 to \$121,000,000 in 1959. The decline was almost all accounted for by a substantial reduction in research work done within reporting companies, particularly in the transportation equipment industry which reported a drop in such expenditures of \$39,000,000. That decrease, however, was partially offset by a gain of \$11,200,000 in expenditures made on research-development by all other industrial groups.

Research-development expenditures for work done within the reporting companies, Canadian facilities in 1959 accounted for 80 p.c. of all outlays and close to 98 p.c. of all expenditures for work done in Canada. Reported expenditures on research-development done outside Canada amounted to \$21,700,000 in 1959, most of which was paid to parent or affiliated organizations in the United States. It should be noted, however, that many companies receive the benefits of research done by a parent or affiliate outside Canada without making any direct payment for such service, so that the \$21,700,000 expenditure may be considered as only a part of the total value of research done outside Canada that benefits companies located here.

The surveys covered all industrial firms in Canada with more than 100 employees, and these numbered about 2,800. In 1959, 471 firms out of this group had research expenditures to report; of the 471 firms, 171 had annual sales of more than \$10,000,000 and accounted for 85 p.c. of all research expenditures made in Canada.

1.—Total Research-Development Expenditures, 1955-60

Year	Expenditure on Research-Development in Canada		Expenditure on Research-Development Outside Canada	Total
	Done Within Reporting Company	Done Outside Reporting Company		
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1955.....	51.4	1.9
1957.....	124.5	3.7	19.8	148.2
1958 (estimate).....	132.5	1	27.0	159.5
1959.....	96.7	2.6	21.7	121.0
1960 (estimate).....	81.8	1	27.3	109.1

¹ Included with expenditures outside Canada.

The following information is centred on expenditures on research-development done in Canada, most of which, as stated above, was undertaken within reporting companies with their own facilities. Table 2 shows the magnitude of changes from 1957 to 1959 for major industry groups. The effect on total expenditures of the decline in the transportation equipment industry is quite apparent.